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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/564,855 | 01/17/2006 | Matthias Maase | 284676US0PCT | 5106 |
| 22850 | 7590 | 09/05/2007 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | VALENROD, YEVGENY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1621 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 09/05/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/564,855

Applicant(s)

MAASE ET AL.

Examiner

Yevgeny Valenrod

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1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/14/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

Specification is objected to. No continuity information is provided in the first paragraph of the specification. Appropriate amendments are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 and 8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The independent claim 1 refers to the starting material as halogen-substituted benzene (II). Likewise the product and the intermediate are assigned values (I) and (III) respectively. The claims are deemed indefinite because the structures for compounds (I) (II) and (III) are not provided. Furthermore, the definition of (II) in claim 3 is broader than in claim 2. Examiner suggests amending the claims to include structures (Ia), (IIa) and (IIIa) found in the specification on pages 2 and 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hugo (US 3,187,057) in view of Bockmann et al (US 4,276,321).

Instant claim 1 is comprises 2 steps. 1) Preparation of a substituted trichloromethyl aromatic. 2) Partial hydrolysis of the said aromatic to obtain a corresponding acid chloride. The two steps as claimed by the applicant are not taught in a single reference.

Scope of prior art

Hugo teaches preparation of trichloromethyl polymethyl benzenes. In column3, Example 1 Hugo describes preparation of trichloromethyl pentamethylbenzene from pentamethyl benzene. The said preparation is carried out in carbon tetrachloride (column 3, line 35-36), in the presence of aluminum chloride (column 3, line 34). After the conversion is deemed complete water is added to the reaction (column 3, lines 45-46 aq. HCl is added; lines 48-49, water is added). Hugo meets all the limitations of Step

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1 of the claimed process. Hugo also recognizes that CCl_4 can be removed via distillation (column 3, lines 51-52)

Bockmann teaches preparation of optionally substituted benzoyl chloride by reacting optionally benzotrichloride (trichloromethyl benzene) with water in the presence of a catalyst. Column 6, example 2 illustrates reaction of benzotrichloride with aqueous sulfuric acid that produces benzoyl chloride. In Example 4, p-chloro-benzoyl chloride is produced in water using iron(II) sulfate as a catalyst. Bockmann also teaches that his invention encompasses trichloromethyl benzene substrates that are substituted with alkyl groups (column 1, lines 54-55) and lists FeCl_3 as a preferred catalyst for the process (column 2, line 22-23).

Ascertaining the difference

Neither Bockmann nor Hugo teaches both steps of the claimed process in a single reference. Neither Bockmann nor Hugo teaches adding aqueous organic phase from step 1 to the process of step 2. Since the aqueous organic phase from step 1 is not present in step 2, CCl_4 that was used in step 1 is also not present in step 2. The distillation process that is used to collect water-free CCl_4 in step 2 is not present.

Ascertaining the skill of one of ordinary skill in the arts

An organic chemist with a few years or an advanced degree is a person of ordinary skill in the art. Such skill would encompass ability to alter reaction conditions to achieve the desired effect, be it yield, cost or purity involved in the process. One of ordinary skill in the art is capable of finding the said conditions through varying temperature and relative concentration of the reagents. One of ordinary skill in the art is

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also capable of performing multistep syntheses and optimizing all or any individual steps when procedures for synthetic steps involved are known.

Obviousness

Combining the steps:

The two steps involved in the claimed process are known. A person of ordinary skill in the art wishing to practice the invention of Bockmann would invariably require a method of obtaining the starting material. Hugo teaches a method for obtaining the said starting material and one skilled in the arts would be motivated to utilize Hugo's method because Hugo demonstrated variability in substrates and moderate to high yields for his method.

Recycling of Water/ CCl_4 from the first to the second step.

In combining two synthetic steps it is common and desirable in the art not to perform purification after the first step. Doing so makes the process faster and cheaper. One of ordinary skill wishing to combine Steps 1 and 2 as taught by Hugo and Bockmann would be motivated use the water/ CCl_4 mixture from the first step as a source of water for the partial hydrolysis in the second step.

Distillation of CCl_4

Bockmann does not teach collecting distilled CCl_4 because CCl_4 is not present in his process. Hugo on the other hand does teach distilling CCl_4 and there is financial incentive to collect CCl_4 and reuse it. Once the two inventions have been combined one of ordinary skill in the art would be motivated to reduce waste and reuse the

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solvent. To accomplish that one would be motivated to distill CCl_4 as suggested by Hugo and collect it for further use.

Temperature and concentrations

One of ordinary skill in the art would be motivated to alter temperature and the concentrations of the reagents in order to find the optimal conditions for the process.

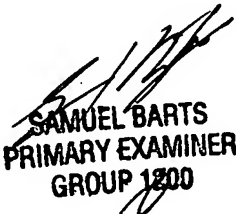
Conclusion

Claims 1-6 and 8-12 are pending

Claims 1-6 and 8-12 are rejected

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


SAMUEL BARTS
PRIMARY EXAMINER
GROUP 1200

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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